

**TECHNICAL REVIEW DOCUMENT
FOR
OPERATING PERMIT 95OPCY005
MODIFICATION #1
to be issued to:**

Mull Drilling Co.
Sorrento Compressor Station
Cheyenne County
Facility ID 0170005

Prepared by Vincent Brindley on October 7, 1998

1. Purpose

This document will establish the basis for decisions made regarding the minor modification to operating permit 95OPCY005. It is designed for reference during review of the proposed permit by the EPA and other interested parties. Information in this report is from the application received on December 9, 1997, August 25, 1998 and September 23, 1998. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised Construction Permit.

2. Source Description

This facility is a natural gas compressor station, classified under the Standard Industrial Classification of 1311, which processes gas to remove liquids and moisture and then reinjects it into the producing reservoir. The facility is located in a flat rural area 6 miles North and 6 miles West of the city of Kit Carson in Cheyenne County, Colorado (NE Section 5, T 14S, R49W). The nearest major road is Highway 40 which is 6 miles South of the facility. Two houses are located within 1 to 1 ½ miles of the compressor station. The state of Kansas has been designated as an affected state located within 50 miles of

the facility. There are no federal Class I areas within 100 kilometers of the plant. The area in which the plant operates, Cheyenne County, is designated as attainment for all criteria pollutants.

The source is considered to be a minor source (Potential To Emit (PTE) < 250 Tons Per Year (TPY)) for purposes of the Prevention of Significant Deterioration (PSD) program. Facility wide emissions are as follows:

Pollutant	Potential To Emit (TPY)		Change (TPY)
	95OPCY005 Issued 9/1/97	95OPCY005 Modification #1	
NO _x	180.70	180.70	0.0
CO	71.50	71.50	0.0
SO ₂	negligible	negligible	n/a
VOC	58.09	80.79	+22.7
PM	negligible	negligible	n/a
PM ₁₀	negligible	negligible	n/a

Potential emissions from the 9/1/97 operating permit were based upon Colorado Construction Permit limitations. Potential emissions for Modification #1 are based upon the minor modification application dated 12/5/97. Emissions of SO₂, PM, and PM₁₀ are negligible from the equipment at this facility. The change in VOC emissions of 22.7 TPY is below the 40 TPY significance level of Regulation No. 3, Part A, Section I, B.58.a.

3. Modifications

Emission Unit S006

S006- Propak Systems, S/N: 85228K, glycol dehydration unit rated at 0.25 MMBTU/hr and 13.82 gal/lb H₂O recirculation rate. Uses ethylene glycol.

a. Emission Permits

The unit was installed and began operation in 1985. Shortly after the issuance of the original operating permit for Sorrento, Mull Drilling noticed that the predicted VOC emissions from GLYCALC did not appear correct. The problem was found to be the input parameter Dry Gas Temperature. Typically, GLYCALC will calculate this parameter from other variables. However, the Sorrento facility uses

a chiller which drops the dry gas temperature below what GLYCALC would normally expect. In this case, GLYCALC was using 80°F while the actual value was -35°F. An additional problem was noticed with ethylene glycol loss.

Originally, Mull Drilling believed that their ethylene glycol loss to be around 200 gallons per year. Again, due to new parameters for GLYCALC, the value was determined to be higher - 1568 gallons/year. This value represents the difference between glycol makeup and the amount that GLYCALC estimates to be lost in the produced liquids.

b. Applicable Requirements Discussion- Since the increase of VOC was below the 40 TPY significance threshold, no additional control measures are required. The existing applicable requirements are still valid but with the following new limitations:

	VOC	Gas Processed
Short Term Limit:	7.26 lb/hr	2 MMSCF/Day
Long Term Limit:	31.8 TPY	730 MMscf/Year

c. Emission Factors- There is currently no single emission factor available for glycol dehydrators as they are dependent upon too many variables. Instead, the GLYCALC model is used to estimate emissions.

d. Monitoring and Compliance- The existing monitoring scheme is still valid for this facility.

4. Conclusions

The source chose to submit the necessary data and permit terms. As such, the Sorrento facility was allowed to emit up to 7.3 lbs/hr and 31.8 TPY at 2 MMscf/Day and 730 MMscf/Year (gas processed) from 9/23/98 through the issuance of this modification.

As this is a VOC emissions increase only, no modeling was required.